



November 30, 2005

Mr. J. Robert Brown  
Engineering Services Division  
Bureau of Air Quality  
South Carolina Department of Health and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

RE: Bowater PSD Permit Application for Kraft Fiberline Optimization  
Information Request for Completeness  
Permit No. 2440-0005

Dear Mr. Brown:

Bowater Coated and Specialty Papers Division (Bowater) received your above referenced information request (reproduced in Attachment 1) dated November 3, 2005. Bowater has requested I forward the response to your attention.

DHEC Request No. 1:

Class I Modeling Analysis, as requested September 13, 2005, via electronic mail (Wall to Moore).

Bowater Response No. 1:

Mr. Bill Jackson of the U.S. Forest Service was contacted regarding the project, and Mr. Jackson suggested preliminary screening-level modeling following the IWAQM and FLAG guidelines to determine if the impacts from the project presented any concerns at Linville Gorge and Shining Rock Wilderness Areas. The preliminary screening modeling was completed in September, and the results indicated that thresholds for visibility/regional haze would be exceeded.

A refined modeling protocol was prepared and submitted to the Forest Service on September 27, 2005. A copy of the refined modeling protocol was hand delivered to DHEC on October 4, 2005. Comments on the protocol were received November 17, and further discussions with the Forest Service on November 29 resolved all outstanding modeling issues. Final modeling results are expected to be available within two weeks.

URS Corporation has completed preliminary refined modeling runs, based on the modeling protocol as submitted, which demonstrate no concerns from the project. The preliminary results for Linville Gorge/Shining Rock are summarized in Table 1.

Table 1  
Preliminary CALPUFF Refined Modeling  
Linville Gorge and Shinning Rock

**BOWATER Class I Modeling Results**

**CALPUFF Refined Level Analysis**

**For Linville Gorge & Shinning Rock**

**Units:** Deposition = kg/ha/year

Regional Haze = % change in extinction

Concentrations = ug/m<sup>3</sup>

**Based on: 5-years of NWS data including 15 surface stations, 12 precipitation stations and 6 upper air stations**

**3-km grid spacing, 9 vertical levels**

		DEPOSITION											
		Total Nitrogen										Threshold	
Year		1986		1987		1988		1989		1990			
Results		0.00037		0.00036		0.00016		0.00026		<u>0.00039</u>	0.01	kg/ha/yr	
		Total Sulfur											
Year		1986		1987		1988		1989		1990			
Results		0.00106		<u>0.00125</u>		0.00052		0.00082		0.00113	0.01	kg/ha/yr	
		Regional Haze											
Year		1986	days >5%	1987	days >5%	1988	days >5%	1989	days >5%	1990	days >5%		
Results		0.89	0	<u>1.6</u>	0	0.65	0	0.72	0	0.82	0	5.0 % Change	
		SO <sub>2</sub> Increment											
Year		1986		1987		1988		1989		1990			
Results	3-hour	0.1173		<u>0.2678</u>		0.0962		0.0634		0.2231	1.0	ug/m <sup>3</sup>	
	24-hour	0.035		<u>0.069</u>		0.026		0.019		0.051	0.2	ug/m <sup>3</sup>	
	Annual	0.001		<u>0.001</u>		0.0004		0.001		0.001	0.1	ug/m <sup>3</sup>	
		PM <sub>10</sub> Increment											
Year		1986		1987		1988		1989		1990			
Results	24-hour	0.00816		<u>0.01640</u>		0.00582		0.00537		0.01299	0.3	ug/m <sup>3</sup>	
	Annual	<u>0.00020</u>		0.00018		0.00012		0.00013		0.00019	0.2	ug/m <sup>3</sup>	
		NO <sub>x</sub> Increment											
Year		1986		1987		1988		1989		1990			
Results	Annual	<u>0.00009</u>		0.00015		0.00007		0.00008		0.00016	0.1	ug/m <sup>3</sup>	

DHEC has also indicated that impacts should be evaluated at Cape Romain Wildlife Refuge. Based on the results at Linville Gorge, visibility is the “controlling” impact from the project. A preliminary screening-level visibility impact analysis has been performed for Cape Romain, and the results are presented in Table 2.

Table 2  
Preliminary CALPUFF IWAQM/FLAG Screening Modeling  
Cape Romain

**BOWATER Class I Modeling Results**

**CALPUFF Screening Level Analysis**

**For Cape Romain**

**Units:**       Regional Haze = % change in extinction

**Based on:** IWAQM/FLAG screening level procedures/guidance

Year	Regional Haze		1988	days >5%	1989	days >5%	1990	days >5%	1991	days >5%	Threshold	% Change
	1987	days >5%										
results	<u>1.77</u>	0	1.58	0	1.47	0	1.37	0	1.16	0	5.0	

The Cape Romain screening-level modeling, following IWAQM/FLAG guidance, will be completed following the refined modeling for Linville Gorge, and are also expected to be available in approximately two weeks.

DHEC Request No. 2:

In accordance with SC Regulation 61-62.5, Standard 7.1 (d)(1)(E), and alternative sites analysis is required. This is defined as “An analysis of alternative sites, sizes, production processes, and environmental control techniques for such proposed source demonstrates that the benefits of the proposed source significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification shall be required.”

Bowater Response No. 2:

*Alternative Sites:*

Bowater Incorporated operates 12 pulp and paper mills in the United States, Canada, and South Korea, manufacturing newsprint, uncoated paper, coated paper, and market pulp. The Catawba mill located in York County, South Carolina, is one of four kraft pulp mills, and currently the only Bowater kraft mill capable of producing Bowater’s highest quality, value-added coated mechanical (coated) paper products (coated #3, #4, and #5). The Catawba kraft mill also produces softwood market pulp.

The three other Bowater kraft mills produce newsprint (Calhoun, Tennessee, Coosa Pines, Alabama, and Thunder Bay, Ontario), hardwood market pulp (Calhoun), fluff market pulp (Coosa Pines), softwood market pulp (Thunder Bay), and uncoated mechanical specialty grades (Calhoun).

Bowater has announced plans to convert a newsprint machine at the Calhoun kraft mill to produce "freesheet hybrid", which is new type of coated paper that will compete against uncoated freesheet grades manufactured by other paper companies. Uncoated freesheet is the largest North American market, with more than double (nearly 15,000,000 tons) the demand of the coated market (approximately 6,500,000 tons). The Calhoun newsprint conversion will not increase production of coated #3, #4, or #5 produced at Catawba.

North American coated paper demand is forecast to increase by over 1,000,000 tons (3.1% annual growth rate) by 2009. Bowater does not operate any other kraft mills producing coated paper, so there is currently no alternative site within Bowater to increase coated paper production to meet increased demand and maintain market share. Bowater's current market share is 15%, therefore an increase of 150,000 tons is required over the next four years simply to maintain Bowater's relative share of the North American coated market.

Therefore, there are no alternative sites to increase coated paper production.

*Alternative Sizes:*

In 2003, Bowater completed a \$175 million dollar investment at Catawba to replace the vintage 1959 kraft pulping and bleaching systems with a new state-of-the-art kraft fiberline that complies with the Voluntary Advanced Technology Incentive Program of the Cluster Rule. Bowater also invested \$100 million dollars at Catawba to convert the No. 3 paper machine from newsprint to coated paper production in 2003.

Following the No. 3 paper machine conversion, Bowater became the second largest coated paper manufacturer in North America, and the Catawba mill became one of the largest coated paper mills in the world. The No. 3 coated paper machine is now the largest coated paper machine in North America, and the No. 2 coated paper machine at Catawba is the fifth largest in North America.

Operating high capacity processes, as well as co-locating multiple high capacity processes in one location, results in economies of scale that increase manufacturing efficiency, reducing manufacturing emissions and costs per ton of product.

Therefore, there are no alternative sizes to manufacture coated paper.

*Alternative Production Processes:*

Bowater operates two converting facilities in Benton Harbor, Michigan and Covington, Tennessee that apply coatings to lightweight uncoated paper manufactured at other Bowater paper mills. These coated papers complement the coated #5 made at Catawba, because they are generally made by coating lighter-weight newsprint made with recycle fiber, a product Catawba can not currently manufacture. Similarly, Catawba makes heavier coated #5, as well as coated #3 and #4, which are not currently capable of being made in Michigan or Tennessee.

Therefore, there are no alternative production processes to manufacture coated #3, #4, and #5 made at Catawba.

*Environmental Control Techniques:*

Lowest achievable emission rate controls have been applied to processes undergoing modification. Please see Response No. 3 for further information regarding other processes at the Catawba mill.

*Environmental Costs:*

Bowater is required to obtain emission offsets for the proposed modification. Therefore, there are no environmental costs associated with the project.

*Social Costs:*

Manufacturing employment in South Carolina and York County continues to decline, especially at the many textile-related manufacturing facilities in the Catawba region. The Bowater Catawba mill provides employment to over 1,000 residents of the Catawba Region (York, Lancaster, and Chester counties) of South Carolina.

Bowater is the fifth largest employer in York County, behind a local school district, hospital, bank, and power company. Bowater is one of the largest power customers in York County, and the families of over 1,000 Bowater employees attend area schools and use the hospital system. Typically, each manufacturing job supports an additional three jobs in the community, from suppliers to service providers.

The social benefits of Bowater continuing to provide over 1,000 stable, high paying manufacturing jobs with health care benefits, along with the estimated 3,000 jobs for suppliers and service providers in the community, becomes more significant with every textile mill closure.

Therefore, there are no social costs associated with the modification, only the benefits of Bowater's continued commitment to the community.

DHEC Request No. 3:

An analysis of potential offset reductions at the SC Bowater facility needs to be completed.

Bowater Response No. 3:

Table 1 contains an analysis of potential offset reductions at the Bowater mill.

DHEC Request No. 4:

Historic test data for all existing sources that triggered a BACT and/or LAER analysis.

Bowater Response No. 4:

Attachment 2 contains historic test data for sources that triggered BACT and/or LAER analysis.

Table 1  
Potential Offset Reductions

Unit ID	Equipment ID	Unit Description	NOx Permit Limit	Annual Emissions TPY (2004 PSDR)	Potential NOx Control	Comments
01	1300	Woodyard Area	NA	0.0	NA	NA
02	5210-5250	Fiberline	NA	0.0	NA	NA
03	5300	Bleach Plant Scrubber	NA	0.0	NA	NA
04	1790	Chlorine Dioxide Scrubber	NA	0.0	NA	NA
05	4400	TMP Process	NA	0.0	NA	NA
06	2000	No. 1 Paper Machine	NA	10.8	Low NOx burner	Feasibility of LNB dependent on age and design of coater dryer.
	4600	No. 2 Paper Machine	<40 TPY	16.5	Low NOx burner	Feasibility of LNB dependent on age and design of coater dryer.
	4100-4130	No. 3 Paper Machine	None	17.5	Unit subject to BACT	Installed Low NOx burner in March 2003 modifications.
	2100	Pulp Dryer	NA	0.0	NA	NA
	9700	Wet End Starch System	NA	0.0	NA	NA
	9900	Air Makeup Units	<40 TPY	3.2	NA	Each unit 10 MMBTU/hr or less.
07	2405	Evaporator Sets No. 1, 2, & 3	NA	0.0	NA	NA
	2400	Precipitator Mix Tanks	NA	0.0	NA	NA
	2505	Recovery Furnace No. 2	NA	243.0	Staged combustion practices	Feasibility of fourth level air dependent on age and design of furnace.
	5105	Recovery Furnace No. 3	80 ppmv @ 8% O <sub>2</sub>	350.3	Unit subject to LAER	Fourth level air installation March 06. Boiler design and good combustion practices.
	2510	Smelt Dissolving Tank No. 2	NA	6.1	None	None
	5110	Smelt Dissolving Tank No. 3	NA	9.5	None	None
	2723	Lime Kiln No. 2	152 ppm @ 10% O <sub>2</sub>	112.6	Unit subject to LAER	No post combustion controls.
	2700	Causticizing	NA	0.0	NA	NA
08	2550	Power Boiler	NA	59.2	Subject to NOX-SIP Call.	LME Boiler.
	2605	Combination Boiler No. 1	NA	287.0	SCNR, Low NOx oil & gas burners, Overfire Air Systems, Good Combustion control	SCNR not appropriate for boilers with high load swings. Feasibility of LNB dependent on age and design of boiler.
	3705	Combination Boiler No. 2	NA	324.6	SCNR, Low NOx oil & gas burners, Overfire Air Systems, Good Combustion control	SCNR not appropriate for boilers with high load swings. Feasibility of LNB dependent on age and design of boiler.

Unit ID	Equipment ID	Unit Description	NOx Permit Limit	Annual Emissions TPY (2004 PSDR)	Potential NOx Control	Comments
09	2902	No. 1 Holding Basin Pump	NA	0.0	NA	NA
	2903	No. 1 Holding Basin Pump	35.26 TPY	0.1	Replace with electric pump.	No longer used regularly.
	2904(1)	Tertiary Treatment Plant Pump	NA	0.0	NA	NA
	2905(1)	Tertiary Treatment Plant Pump	NA	0.0	NA	NA
	9800	Condensate Collection Tank	NA	0.0	NA	NA
	9801	Condensate Steam Stripper	NA	121.5	NA	Controlled by Combination Boilers.
10	1100	Storage Tanks	NA	0.0	NA	NA
11	2900	Miscellaneous	NA	0.0	NA	NA

SCR - Selective Catalytic Reduction

SNCR - Selective Non-catalytic Reduction

LNB - Low NOx Burner

LME - Low Mass Emission

If you have additional questions regarding this submittal please contact Dale Herendeen of Bowater at (803) 981-8009, Jacquelyn Taylor of Bowater at (864) 981-8759, or me at (864) 527-4734.

Sincerely,

Steven R. Moore  
URS Corporation

cc: Dale Herendeen – Bowater  
Jacquelyn Taylor – Bowater

**Attachment 1**  
**November 3, 2005 Information Request for Completeness**



**Attachment 2**  
**Historic Test Data**